Name:

at1113exam: Expand, factor, and solve quadratics (v313)

1. Solve the equation.

$$(5x - 8)(4x - 7) \;=\; 0$$

$x = \frac{8}{5}$ $\qquad$ $x = \frac{7}{4}$

2. Expand the following expression into standard form.

$$(5x + 3)^2$$

$25x^2 + 15x + 15x + 9$

$25x^2 + 30x + 9$

3. Expand the following expression into standard form.

$$(8x + 7)(8x - 7)$$

$64x^2 - 56x + 56x - 49$

$64x^2 - 49$

4. Expand the following expression into standard form.

$$(9x - 5)(2x + 7)$$

$18x^2 + 63x - 10x - 35$

$18x^2 + 53x - 35$

5. Factor the expression.

$$25x^2 - 36$$

$$(5x + 6)(5x - 6)$$

6. Solve the equation.

$$9x^2 + 54x + 51 \;=\; 2x^2 - 3x - 5$$

$$7x^2 + 57x + 56 = 0$$
$$(7x + 8)(x + 7) = 0$$
$$x = \frac{-8}{7} \qquad x = -7$$

7. Solve the equation with factoring by grouping.

$$10x^2 + 8x + 15x + 12 \;=\; 0$$

$$(2x + 3)(5x + 4) = 0$$
$$x = \frac{-3}{2} \qquad x = \frac{-4}{5}$$

8. Factor the expression.

$$x^2 - 16x + 63$$

$$(x - 9)(x - 7)$$